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F. N. Koumboulis 1885 Block Decoupling of Generalized State Space Systems

E. Presman, S. P. Sethi and W. Suo 1899 Existence of Optimal Feedback Production Plans in Stochastic Flowshops With Limited Buffers

J.-X. Xu 1905 Analysis of Iterative Learning Control for a Class of Nonlinear Discrete-Time Systems

J. Yoneyama, J. L. Speyer and C. H. Dillon 1909 Robust Adaptive Control for Linear Systems With Unknown Parameters

J.-L. Wu and T.-T. Lee 1917 A New Approach to Optimal Regional Pole Placement

L. Lee, C.-H. Fang and J.-G. Hsieh 1923 Exact Unidirectional Perturbation Bounds for Robustness of Uncertain Generalized State-Space Systems: Continuous-Time Cases

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D. Flynn, S. McLoone, G. W. Irwin, M. D. Brown, E. Swidenbank and B. W. Hogg 1961 Neural Control of Turbogenerator Systems

S.-H. Yu and A. M. Annaswamy 1975 Adaptive Control of Nonlinear Dynamic Systems Using θ-Adaptive Neural Networks

L. Mirkin and Z. J. Palmor 1997 Mixed Discrete/Continuous Specifications in Sampled-Data H^2-Optimal Control

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